Answer on Question #42911, Chemistry, Other

Question:

When 45 g of an alloy, at 25 c, are dropped into 100.0 g of water, the alloy absorbs 228.5 cal of heat. If the final tempature of the alloy is 37 c, what is its specific heat?

Solution:

The energy received by alloy can be calculated from the following equation:

$Q = c \cdot m \cdot (T_f - T_i)$
$45 \cdot (T_f - T_i) \cdot c = 45 \cdot 12 \cdot c = 228.5,$

where T_f and T_i are final and initial temperatures,
c – specific heat.

c = 228.5/45/12= 0.42 cal/g

Answer: 0.42 cal/g